



What's Inside...

- 2 Features
- 3 NSROC & SRPO Reports
- 4 Picture Place
- 5 Schedules, Events & Miscellanea

Rocket report

4 1
3 2 2008

Sounding Rockets Program Office

Sub-TEC 2 launched successfully on July 14, 2008

In Brief...

The 41.081 Wheeler - University Student Experiment Rideshare (USERS) design review was held on August 29, 2008.

36.226 Bock launch is re-scheduled for no earlier than February 2009.

36.213 Davis, scheduled for launch from White Sands in September, has been re-scheduled for 2009 due to low solar activity.

Purdue University - PennState collaborative nano-aluminum - ice motor development is progressing well. Test firings of a 1.5" and 3" diameter motors have been conducted. First flight is scheduled for May 2009.

Preparations for Poker 2009 have started. 41.076 - 41.079 Lehmacher payloads are in T&E and 30.073 Thorsen has completed integration and testing. More on page 2.

36.207 Kowalski has completed integration and testing. Launch is currently scheduled for October 2, 2008.



41.075 Sub-TEC 2 Liftoff

Photo by Wallops Imaging Lab /Lee Wingfield

The Suborbital Technology Experiment Carrier, Sub-TEC II, was successfully launched from Wallops Island on July 14, 2008.

Sub-TEC missions are designed to provide opportunities for multiple experiments and organizations to share a ride. Seven different organizations, internal as well as external participated in Sub-TEC 2.

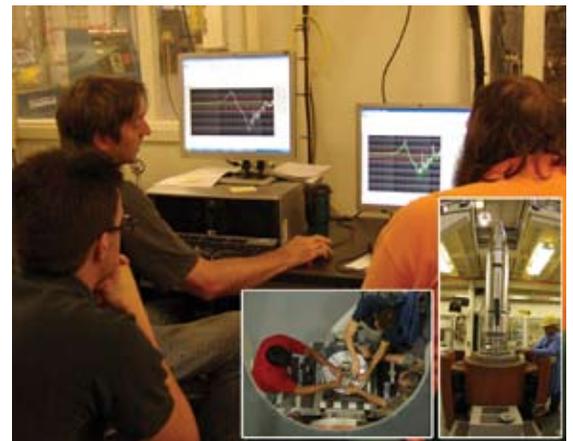
Sub-TEC 3, Bull 41.082 is schedule for flight in April 2009. For more information about Sub-TEC opportunities, please contact the Sounding Rocket Program office: <http://sites.wff.nasa.gov/code810/contact.html>

Significant upgrades to vibration test equipment

The Testing and Evaluation Lab (T&E Lab) conducts pre-flight environmental testing for sounding rocket payloads and instruments and equipment from other NASA organizations. Environmental testing may include vibration, spin-balancing, deployments, mass properties measurements, magnetic calibration and thermal vacuum.

Recently performed upgrades to the vibration equipment included the installation of a new vibration controller.

Continued on Page 2.



Shane Thompson, Rob Marshall and Glenn Maxfield reviewing Lehmacher 41.076 vibration data.

Photo by Berit Bland

Significant upgrades... continued

The new equipment features an upgraded CPU capable of faster processing at higher data rates enabling faster response to events.

A full complement of 15 sensors, placed on the fixture and at critical locations on the test item, can be used for a complex vibration control strategy involving vibration profiles where limiting is effectively employed at all channels.

Time Domain Recording, a new feature, enables enhanced post-flight analysis by allowing test data to be compared to flight data. This function records all channels continuously in the time domain.

Other features include data overlays of several tests for easy comparison and efficient data archiving. Future upgrades will incorporate force sensor interfacing for delicate instruments.

Contact Glenn Maxfield for more information.
Email: maxfield_glenn@nsroc.net
Phone: (757) 824-1731



Photo by Berit Bland

Rob Marshall and Dan Hudson, T&E Lab, preparing one of the LeMacher payloads for vibration.

41.076 - 41.079 Lehmacher

Four Lehmacher payloads, 41.076 – 41.079 are in integration and testing in preparation for launch as part of the Poker Flat 2009 campaign. 41.076 and 41.077 carry Trimethyl Aluminum (TMA) only, while 41.078 and 41.079 include two instruments in addition to TMA; a fixed-bias Langmuir probe in the nosetip and the Combined Neutral and Electron sensor (CONE)



Photo by Berit Bland

Glenn Maxfield and intern Nate Wroblewski with an instrumented Lehmacher payload.

By addressing questions about the turbopause, the data gathered with these instruments will aid the modeling and understanding of the ionosphere-thermosphere system and the Sun-Earth interface. The turbopause a boundary in the Earth's neutral atmosphere where turbulent mixing competes with molecular diffusion.

The goal is to launch a salvo of four rockets at the onset of a wave breaking or instability event as diagnosed by the Poker Flat Research Range (PFRR) sodium lidar. The first rocket is a TMA payload (41.076), followed by two instrumented payloads with TMA (41.078, 41.079), and last a TMA payload (41.077). (Ref. Design Review Data package)

30.073 - Thorsen

Two very tired but happy students returned to Alaska after an intense learning experience integrating and testing their payload at Wallops.

The Ionospheric Science and Inertial Sensing (ISIS) payload is built by students from University of Alaska Fairbanks (UAF). The mission is designed to measure the plasma and geomagnetic structures of the D-region ionosphere and ozone density at lower altitudes in a high latitude region. In addition to a plasma probe, provided by UAF, students from Toyoma Prefectural University (TPU) in Japan are providing a radio receiver for plasma studies and students from Tokai University, also in Japan, are providing a magnetometer for geomagnetic structure studies and an ultraviolet absorption sensor for ozone density studies.

The ISIS project also includes opportunities for engineering students with four distinct objectives: attitude determination, generation of a temperature profile for the rocket skin, flight verification of a student developed telemetry system (compliant with IRIG106-05 standards), and development of a non-pyrotechnically deployable door.



Photo by Berit Bland

UAF students preparing their payload for vibration testing in the T&E Lab at Wallops.

Devin Hahne and Jesse Frey (pictured above), both from University of Alaska Fairbanks (UAF), participated in every aspect of testing their student built payload prior to flight; including bend test, mass properties measurements, vibration testing and electrical checks.

Rocket Report

Interns at NSROC...

Another successful intern session came to an end with final presentations conducted on August 7, 2008.

10 of NSROC's 12 summer interns from Virginia Tech, PennState University, University of Texas/Dallas, University of Virginia and Hollins gave presentations about their internship experience to Wallops employees. The interns had been part of the Mechanical and Electrical Engineering sections, Guidance, Navigation and Control, and the Testing and Evaluation Lab. Additionally, one of the interns had been working in Business Management.



Group photo with interns and NASA and NSROC management outside of the Range Control Center.

Experiences ranged from hands-on work in the Testing and Evaluation Lab to highly analytical tasks applying neural network theory to attitude control systems.



Interns in T&E assisting with the SOAREX payload.

The program, now in its 9th year, accepts an average of 9 co-ops and 10 interns annually. Please contact Jan Jackson at (757) 824-6172 or jpdjack@msn.com for more information about the internship program.

NSROC Reports



12.067 the new Terrier-Improved Malemute is scheduled to fly in FY09. A Larsen falling sphere will fly on this mission of opportunity.

Brian Hall is the new SRPO Technology Manager. Brian comes from the Range and Mission Management Office and has also worked in the NSROC Mechanical Engineering section.

A new concept – Extended Duration Sounding Rocket – is under consideration. This new capability, initiated in support of the Astrophysics community, would enable flights of existing telescope payloads for longer durations.

A Mission Initiation Conference (MIC) has been scheduled for RockOn II. The RockOn student flight missions are managed by the Colorado and Virginia Space Grant Consortia. The first mission, 30.074, was flown June 26, 2008.

SRPO Reports

Launchers at Poker Flat have been surveyed in preparation of the 2009 campaign. Additional preparations include re-installation of the wind weighting system and improvements to the communications infrastructure.

Upgrades to Testing and Evaluation lab equipment (vibration and mass properties) are nearing completion.

Support for the Max Launch Abort System (MLAS) test project has been provided through parts fabrication in the machine shop. Additionally, the electrical sections is wiring the firing harness and TM decks one and two. Dana Crouch machining parts to attach the MLAS crew module to the composite shell.

John Farrell and Tom Shockley inspecting MLAS parachute tent fixtures.



Photo by Berit Bland

Photo by Berit Bland

Rocket Report

Picture Place...

- 1 Bill Payne and Devin Hahne, UAF, preparing 30.073 for bend testing.
- 2 Nick Wroblewski and Glenn Maxfield discussing fins.
- 3 Scott Hesh and Charlie Cathell with the Thorsen payload on the vibration table.
- 4 Lamar Durham, Clemson University with 41.076 Lehmacher.
- 5 Nick Cranor also with a Lehmacher payload.
- 6 Bernita Justis and Travis Murray testing Booms for Bounds.



Want to contribute?

Working on something interesting, or have an idea for a story? Please let us know, we'd love to put it in print!

Contact:
 Chuck Brodell
 Phone: 1827
 Email: Charles.L.Brodell@nasa.gov
 or
 Berit Bland
 Phone: #2246
 Email: Berit.H.Bland@nasa.gov

Your thoughts...

Question: "What is the most interesting part of your job at Wallops?"

"I've been working at Wallops for 30 years and have enjoyed all the various tasks and opportunities during this time. In my current position, operating the ground stations for the sounding rocket program, I have found that interacting with the payload teams and scientists, making sure they get the support they need, is interesting and very rewarding."

– Bill Doughty/NSROC

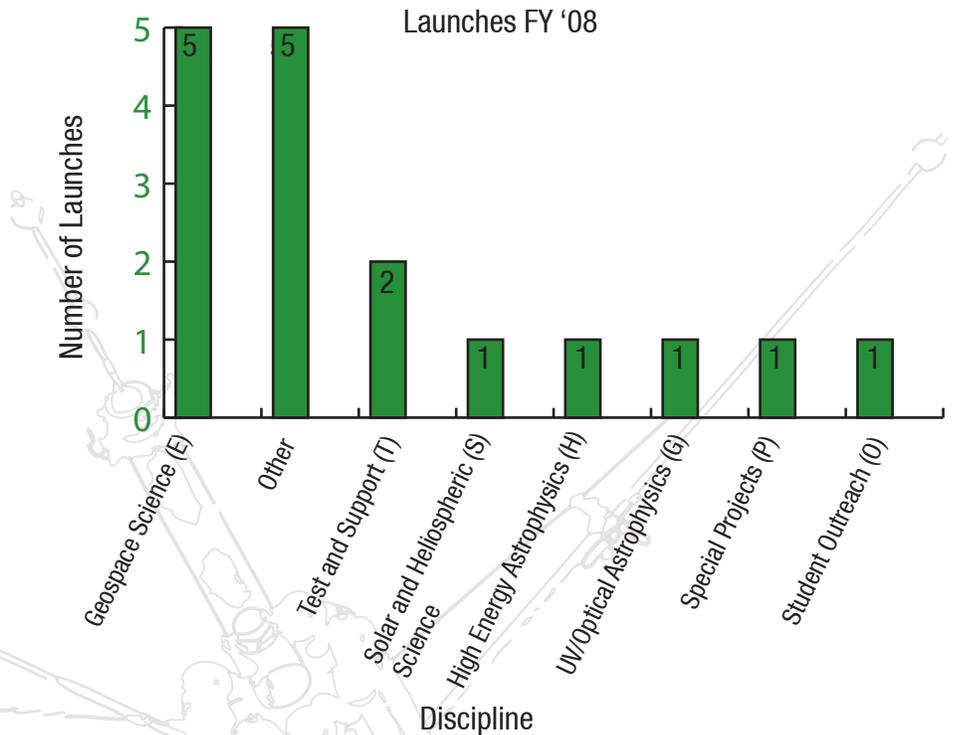


Bill monitoring charts in the ground station.

We apologize for misspelling Bill's last name in the previous issue of the Rocket Report. This time it's correct.

FY '08 ends with 100% success!

Total Missions: 17
 Successes: 17
 Success rate: 100%
 Disciplines: 9



FY '09 Launch Schedule

- October**
36.207 DG KOWALSKI/NRL WS
- November**
36.221 DS MOSES/NRL WS
- December**
12.067 GT HALL/NASA-WFF WI
- January**
36.242 UE BOUNDS/UNIVERSITY OF IOWA FB
21.139 UE BOUNDS/UNIVERSITY OF IOWA FB
30.073 UO THORSEN/UNIV. OF ALASKA FB
- February**
40.023 UE LYNCH/DARTMOUTH COLLEGE FB
41.076 UE LEHMACHER/CLEMSON UNIVERSITY FB
41.077 UE LEHMACHER/CLEMSON UNIVERSITY FB
41.078 UE LEHMACHER/CLEMSON UNIVERSITY FB
41.079 UE LEHMACHER/CLEMSON UNIVERSITY FB
36.226 UG BOCK/CAL TECH WS FEB
- March**
36.244 UG GREEN/UNIVERSITY OF COLORADO WS
- April**
36.213 NS DAVIS/MSFC WS
41.082 NP BULL/NASA WI
36.239 DS KORENDYKE/NRL WS
36.219 US HASSLER/SWRI WS
- June**
36.252 UH CASH/UNIV. OF COLORADO
- TBD**
36.225 UG CHAKRABARTI/BOSTON UNIVERSITY WS TBD

HELP!

Do you have old photographs of sounding rockets, payloads, people, remote site campaigns – anything related to the sounding rocket program?

We would like to borrow your photos, scan and display them on the web as part of a historical review. Originals will be returned to you after scanning.

Please contact Berit Bland by phone: #2246 or email: Berit.H.Bland@nasa.gov